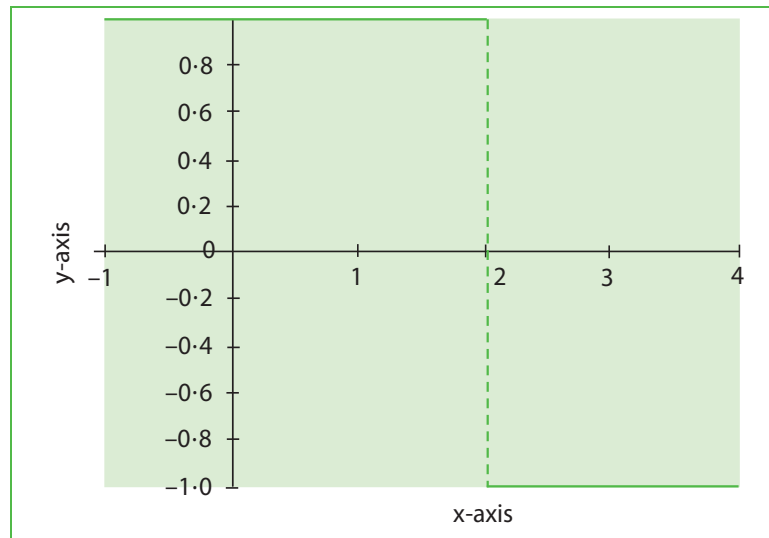


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Because the equation:

$$y = \begin{cases} 1 & \text{for } x \leq 2 \\ -1 & \text{for } x > 2 \end{cases}$$

means that no matter what the value is that is assigned to  $x$ , if it is less than or equal to 2 the value of  $y$  is 1. If the value of  $x$  is greater than 2 the corresponding value of  $y$  is  $-1$ . Notice the gap between the two continuous straight lines. This is called a *discontinuity* – not all equations produce smooth continuous shapes so *care must be taken when joining points together with a continuous line*. The dashed line joining the two end points of the straight lines is only there as a visual guide, *it is not part of the graph*.

*At this point let us pause and summarize the main facts so far*

Handy summaries at the end of each unit - students advise us that they value these very much



## Revision summary

Unit 1

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- 1 Ordered pairs of numbers can be generated from an equation involving a single independent variable.
- 2 Ordered pairs of numbers generated from an equation can be plotted against a Cartesian coordinate frame.
- 3 The graph of the equation is produced when the plotted points are joined by smooth curves.
- 4 Some equations have graphs that are given specific names, such as straight lines and parabolas.
- 5 Not all equations are of the simple form  $y = \text{some expression in } x$ .
- 6 Not all graphs are smooth, unbroken lines. Some graphs consist of breaks called discontinuities.